

Commercial Space Transportation Advisory Committee

Fall Meeting, October 23, 1997

MINUTES

COMSTAC Chair Ron Grabe convened the meeting at 8:25 a.m.

REPORT BY AST

Patricia G. Smith, Acting Associate Administrator, reported on the activities of the Office of the Associate Administrator for Commercial Space Transportation (AST). She reported on AST's relocation from the Department of Transportation Headquarters building to the Federal Aviation Administration (FAA) building, 800 Independence Avenue SW, Washington, DC. She noted that the move represents a final step in the transfer of AST from the Office of the Secretary within the Department of Transportation to the FAA.

Ms. Smith gave an in-depth report on the status of AST's three-phase regulatory initiative. She reported that phase 1 includes two notices of proposed rulemaking (NPRMs)--one on financial responsibility and one on licensing launches from federal ranges; phase 2 focuses on non-federal launch sites (commercial spaceports); and phase 3 is concerned with licensing reusable launch vehicles. She mentioned that AST is still pursuing the authority from Congress to regulate reentry operations with the goal of having RLV regulations in place by 1999. Ms. Smith summarized the status of each NPRM:

- The comment period for the financial responsibility NPRM was reopened in the summer and ended on August 4th. That NPRM, now in formal DOT/FAA review, is expected to be issued as a final rule by the end of 1997.
- The comment period for the NPRM on licensing launches from federal ranges also ended on August 4th. The final rule should be drafted by the end of October, with the publication of the final rule by Spring 1998.
- The NPRM for licensing non-federal launch sites has been drafted and is under review by the AST rulemaking team. The proposed publication date for this NPRM is Summer 1998.
- The AST rulemaking team is currently in the process of drafting a notice for licensing launches from non-federal sites. This NPRM is scheduled for publication in Fall 1998.

Ms. Smith reported on the establishment of a Memorandum of Agreement (MOA) between the FAA, DOD and NASA which outlines the respective roles and responsibilities of each agency for interactions with commercial launch sites and commercial launch site operators. She mentioned that this MOA would be useful especially in a new environment at non-federal launch sites with the absence of Air Force and NASA safety oversight during launch operations.

Ms. Smith next reported on several activities in which AST is cooperating with the Air Force and/or NASA. These include:

- an Integrated Product Team (IPT) on current launch scheduling practices at national ranges;
- an IPT on the handling of launch mishap investigations;
- a working group on range safety restructuring, co-chaired with U.S. Space Command;
- working as a cooperating agency with NASA on the X-33 RLV technology demonstration project; and
- working as a cooperating agency with the Air Force on EELV development to ensure the consideration of commercial launch requirements and most recently reviewing the Environment Impact Statement for the EELV project.

Ms. Smith reported on other AST activities. She discussed a series of meetings with the Bureau of Alcohol, Tobacco and Firearms and the Environmental Protection Agency regarding cooperative efforts on explosives and toxic substances issues related to commercial launch site operations; and ASTs continuing support for the Office of the U.S. Trade Representative during consultations with Russia, China and Ukraine regarding the commercial launch trade agreements.

Ms. Smith also reported on licensed commercial launch activity for the 1997 calendar year. She noted that as of October, 13 licensed launches have taken place with several more planned before the end of the year; AST issued 5 new launch licenses, and 1 to operate a commercial site, Spaceport Florida. She noted that one of the licenses issued was to Lockheed Martin for the first commercial launch to the Moon, Lunar Prospector, and that this would also be the first launch from Spaceport Florida and the maiden flight for LMLV 2. Ms. Smith congratulated the industry on a successful year.

Ms. Smith concluded her report with the announcement of two major activities which focus on the future of the U.S. commercial launch industry. The first activity is the development of a partnership with the FAAs Air Traffic Service (ATS), to begin planning for a fully-integrated air and space traffic management system. In support of this activity, AST is working with the Massachusetts Institute of Technology and Virginia Polytechnic Institute on a project to examine the integration of air traffic and launch reentry vehicles in the airspace system.

The second activity is the organization of FAAs first national commercial space forecast conference entitled ***Commercial Space Transportation in the 21st Century: Technology and Environment, 2001-2025***, which is scheduled for February 10 and 11, 1998. Ms. Smith noted that additional information on the conference would be mailed to all attending the meeting and would also be available on the AST website.

REPORT ON GPS AS A METRIC TRACKING SOURCE

Lt. Col. Al Coxe, Chief, Requirements Branch, Air Force Space Command, reported on the Air Forces efforts to transfer over to the use of GPS for tracking launch vehicles off the Eastern and Western ranges instead of using radar. He reported that this effort is part of the Air Force Range Standardization & Automation Program (RSA) and that the major goals of the RSA are to: reduce the operations and maintenance costs of the spacelift ranges by 20% from FY 95; and to increase range system reliability and maintainability. He stated that ranges track launch vehicles

to ensure public safety and provide data to launch vehicle operators for performance analysis or anomaly investigation.

Lt. Col. Coxe noted that currently 21 radars are used to track launch vehicles--18 of these are owned by the Air Force and 3 are owned by the Navy. He reported that the cost for operation, maintenance and sustainment for current radars is \$1.2 million per year per radar and that 6 of the 18 radars have multiple uses, whereas 12 are used solely for launch vehicle tracking. Lt. Col. Reported that these 12 would be replaced by GPS.

Lt. Col. Coxe identified the year 2003 as the transition point for using GPS, noting that 2003 was selected because it will be an economical breakpoint for the transfer over of the Minuteman missiles, the current fleet of launch vehicles that have C-band beacons will be exhausted, and the EELV would be transitioned over to GPS. He said that the Air Forces schedule would meet the proposed first launch date for EELV.

REPORT FROM THE CONGRESS

Jim Muncy, Professional Staff member to Congressman Dana Rohrabacher, provided a legislative update on commercial space transportation issues and the activities of the House Subcommittee on Space and Aeronautics. He reported that

the Civilian Space Authorization Bill, H.R. 1275 passed through the House at the end of April and that the name of the Bill was changed from the NASA Authorization Bill to indicate the involvement of all agencies concerned with commercial space issues including FAA and Commerce. He noted that the Bill is currently in the Senate, introduced as Senate 1250. He also reported that the Committee funded AST for \$6 million; funded X-33, X-34 and future NASA X programs; and directed NASA to do studies on Space Shuttle privatization, Space Station commercialization, and the commercial opportunities for transportation to and from the space station.

Mr. Muncy reported that the Commercial Space Act of 1997, H.R. 1702, introduced by Congressman Sensenbrenner moved through the Committee by July and that Florida Senators Graham and Mack agreed to sponsor a companion bill to 1702. He also discussed briefly the issue of restructuring the NASA Bantam Lifter program, Space Shuttle upgrades, and Shuttle privatization.

SPECIAL SECTION: UPDATE ON COMMERCIAL SPACEPORTS

The Committee heard status reports on commercial spaceports from Mr. Ed O'Connor, Executive Director, Florida Spaceport Authority; Mr. Pat Ladner, Executive Director, Alaska Aerospace Development Corporation; and Mr. Billie Reed, Executive Director, Virginia Space Flight Center.

Mr. O'Connor focused his briefing on Floridas quick reaction program (QRP) which would provide the ability to generate launch operations within 72 hours of identification of a need and launch within 6 hours of notification.

Mr. Ladner's briefing focused on the design of the Kodiak Launch Complex and noted that it is designed to support solid rocket motors with the capability of adding liquid fueled vehicles in the future. Mr. Ladner emphasized the all-indoor processing of the launch control management center at the Complex.

Mr. Reed discussed the organizational development, and the various facilities and launch capabilities of the Virginia Space Flight Center. He noted that the goal of the initiative for Virginia is to promote economic development as well as aerospace education. Mr. Reed gave a detailed description of launch sites operations at the Virginia Center.

REPORT ON SPACE LAUNCH MISHAP INVESTIGATION POLICY

Lt. Col. Marc Owen, Chief, Space Plans and Strategy, Office of the Assistant Secretary of the Air Force, reported on the Air Force's study of the policy practices and procedures for space launch mishap investigations. This study came about as a result of the January 1997 Delta II launch vehicle explosion and the subsequent concerns regarding timely release of investigative data to the commercial industry by the Air Force.

Lt. Col. Owen reported on how the mishap investigation process works and discussed return-to-flight implications for the commercial launch industry. He reported that the Air Force Integrated Product Team completed its review and those results were briefed to the Secretary of the Air Force on October 22nd. Lt. Col. Owen concluded that final release of the study would probably be in early 1998.

WORKING GROUP REPORTS

Technology and Innovation Working Group: Working Group Chair Paul Fuller reported the group's activities since the May 1997 COMSTAC meeting. He reported that for EELV issues, the Assistant Secretary of the Air Force for Acquisition convened a meeting with industry on June 12th and the Working Group held the fourth meeting with the Air Force EELV program office on June 27th.

Mr. Fuller reported that a briefing was conducted for government officials on August 13th, which included presentations on the 1997 Commercial Mission Model Update and AST's 1997 LEO Market report. He also reported on the status of the Working Group's efforts to convert the Mission Model from a satellite demand model to a vehicle launch model. Mr. Fuller provided a draft amendment to the 1997 Mission Model for review and comments by Committee members.

Mr. Bob Davis reported on the work of the Reusable Launch Vehicle Working Group, a subgroup of the Technology and Innovation Working Group. He described the RLV working group meeting which took place on the previous day and noted that the RLV group is tasked with compiling their views with respect to how FAA regulations will apply to the reentry and reuse phases of RLVs in the future. He noted that the proposed completion date for that task is January 1998.

DOD LAUNCH ON DEMAND IMPACT STUDY

Major General Robert Dickman, Department of Defense (DOD) Space Architect, briefed the Committee on DOD's study on the Impact of Launch on Demand (LoD). General Dickman reported that the purpose of the study is to assume a reasonable LoD capability, then examine and assess what would change. He noted that work on the study has produced a definition for LoD as the time from an unscheduled launch call until first usable service to the customer (i.e., when the satellite is on orbit and working). He also noted that 45 days is the current average processing time for launching.

General Dickman reported that the LoD study has identified several questions:

- if LoD is available, how would it be used?
- what changes must be made to enable LoD?
- what could change if LoD is available?
- what are the risks inherent in LoD?
- what are the costs of LoD?

General Dickman informed the Committee that the Air Force is considering doing a space architect exercise for the commercial industry and asked that commercial representatives express an interest to his office for such an exercise.

NEW BUSINESS

Jack Wormington, Hughes Space and Communications, (standing in for member, Don Cromer, for the last part of the meeting) expressed concern regarding quotas on foreign launch vehicles. Chairman Grabe requested that the Technology and Innovation Working Group develop a position as to the appropriateness or inappropriateness of the Federal government assigning quotas to foreign launch vehicles.

Mr. Wormington also raised the issue of having the LEO market report consolidated into the GEO Mission Model. Ms. Smith stated that AST would continue to produce the LEO report since some of the report data is proprietary and that much of it is used to support AST's work with the Office of the U.S. Trade Representative. She added that the LEO/MEO market is still very variable. Livingston Holder, The Boeing Company, suggested that similar methodologies and formats be used for both the LEO and GEO reports so that the reports would look and feel similar. There was consensus that the Committee and AST would continue working together to bring the two reports closer together.

The meeting was adjourned at 1:12 p.m., subject to the call of the Chair.

Ronald J. Grabe

Chairman, COMSTAC